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## Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.



**WORK ORDER NUMBER: 16-08-0626**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Beta Offshore

**Client Project Name:** Weekly NPDES Produced Water Monitoring

**Attention:** Diana Lang  
111 W. Ocean Blvd., Suite 1240  
Long Beach, CA 90802-4633

*Nicole Scott*

Approved for release on 08/23/2016 by:  
Nicole Scott  
Project Manager

ResultLink ▶

Email your PM ▶

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Work Order Number: 16-08-0626

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/09/16. They were assigned to Work Order 16-08-0626.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



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## Analytical Report

Beta Offshore  
111 W. Ocean Blvd., Suite 1240  
Long Beach, CA 90802-4633

Date Received: 08/09/16  
Work Order: 16-08-0626  
Preparation: N/A  
Method: EPA 1664A  
Units: mg/L

Project: Weekly NPDES Produced Water Monitoring

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NPDES Prod. Water	16-08-0626-2-A	08/09/16 02:38	Aqueous	N/A	08/22/16	08/22/16 15:10	G0822HEML1
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
HEM: Oil and Grease		64200	1000		1.00		
NPDES Prod. Water	16-08-0626-3-A	08/09/16 02:38	Aqueous	N/A	08/22/16	08/22/16 15:10	G0822HEML1
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
HEM: Oil and Grease		62300	1000		1.00		
NPDES Prod. Water	16-08-0626-4-A	08/09/16 02:38	Aqueous	N/A	08/22/16	08/22/16 15:10	G0822HEML1
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
HEM: Oil and Grease		86000	1000		1.00		
Method Blank	099-05-119-4404	N/A	Aqueous	N/A	08/22/16	08/22/16 15:10	G0822HEML1
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>	
HEM: Oil and Grease		ND	1.0		1.00		

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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## Quality Control - Spike/Spike Duplicate

Beta Offshore  
111 W. Ocean Blvd., Suite 1240  
Long Beach, CA 90802-4633

Date Received: 08/09/16  
Work Order: 16-08-0626  
Preparation: N/A  
Method: EPA 1664A

Project: Weekly NPDES Produced Water Monitoring

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Quality Control Sample ID	Type		Matrix		Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number			
16-08-0731-1	Sample		Aqueous		N/A	08/22/16	08/22/16 15:10	G0822HEMS1			
16-08-0731-1	Matrix Spike		Aqueous		N/A	08/22/16	08/22/16 15:10	G0822HEMS1			
16-08-0731-1	Matrix Spike Duplicate		Aqueous		N/A	08/22/16	08/22/16 15:10	G0822HEMS1			
Parameter	Sample Conc.	MS Spike	MS Conc.	MS %Rec.	MSD Spike	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	4.170	40.00	35.77	79	40.00	36.92	82	78-114	3	0-18	

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RPD: Relative Percent Difference. CL: Control Limits



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## Quality Control - LCS/LCSD

Beta Offshore  
111 W. Ocean Blvd., Suite 1240  
Long Beach, CA 90802-4633

Date Received: 08/09/16  
Work Order: 16-08-0626  
Preparation: N/A  
Method: EPA 1664A

Project: Weekly NPDES Produced Water Monitoring

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-05-119-4404	LCS	Aqueous	N/A	08/22/16	08/22/16 15:10	G0822HEML1				
099-05-119-4404	LCSD	Aqueous	N/A	08/22/16	08/22/16 15:10	G0822HEML1				
Parameter	LCS Spike	LCS Conc.	LCS %Rec.	LCSD Spike	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	40.00	41.00	102	40.00	39.00	98	78-114	5	0-18	

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RPD: Relative Percent Difference. CL: Control Limits

## Sample Analysis Summary Report

Work Order: 16-08-0626

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 1664A	N/A	784	N/A	1

  
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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

## Glossary of Terms and Qualifiers

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

SAMPLE NO.	SAMPLE ID	GRAB/COMP.	VOLUME	DATE/TIME COLLECTED	PRESERV.	ANALYSES REQUESTED (METHOD)
1	NPDES Prod. Water	grab	1 L amber	8-9-16 02:38	H2SO4	Oil & Grease (EPA 1664) + Zn (EPA 200.8)
2	NPDES Prod. Water	grab	1 L amber	8-9-16 02:38	H2SO4	Oil & Grease (EPA 1664) Hold
3	NPDES Prod. Water	grab	1 L amber	8-9-16 02:38	H2SO4	Oil & Grease (EPA 1664) Hold
4	NPDES Prod. Water	grab	1 L amber	8-9-16 02:38	H2SO4	Oil & Grease (EPA 1664) Hold
<b>Caution to Sample Collector:</b> All sample bottles contain a concentrated acid preservative.						
						Use proper PPE including gloves and goggles when collecting the samples.

**To Lab: For Samples 1-4: Analyze Sample #1 only - hold other samples until further notice.**

Relinquished by: Randy Date: 8/9/16  
Received by: [Signature] Time: 1440

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
Received by: \_\_\_\_\_ Time: \_\_\_\_\_

# SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: LTS ENVIRONMENTAL INC.

DATE: 08 / 9 / 2016

**TEMPERATURE:** (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 2.4 °C (w/ CF): 2.4 °C; ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 676

## CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 676

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 1053

## SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COC document(s) received complete .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers

☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time

Sampler's name indicated on COC .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Sample container label(s) consistent with COC .....	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Sample container(s) intact and in good condition .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Proper containers for analyses requested .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sufficient volume/mass for analyses requested .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Samples received within holding time .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Aqueous samples for certain analyses received within 15-minute holding time

<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen .....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Proper preservation chemical(s) noted on COC and/or sample container .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Unpreserved aqueous sample(s) received for certain analyses

☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals

Container(s) for certain analysis free of headspace .....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)

☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**CONTAINER TYPE:** (Trip Blank Lot Number: \_\_\_\_\_)

**Aqueous:** ☐ VOA ☐ VOA<sub>h</sub> ☐ VOA<sub>na2</sub> ☐ 100PJ ☐ 100PJ<sub>na2</sub> ☐ 125AGB ☐ 125AGB<sub>h</sub> ☐ 125AGB<sub>p</sub> ☐ 125PB

☐ 125PB<sub>znna</sub> ☐ 250AGB ☐ 250CGB ☐ 250CGB<sub>s</sub> ☐ 250PB ☐ 250PB<sub>n</sub> ☐ 500AGB ☐ 500AGJ ☐ 500AGJ<sub>s</sub>

☐ 500PB ☐ 1AGB ☐ 1AGB<sub>na2</sub> ☒ 1AGB<sub>s</sub> ☐ 1PB ☐ 1PB<sub>na</sub> ☐ \_\_\_\_\_ ☐ \_\_\_\_\_ ☐ \_\_\_\_\_

**Solid:** ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (\_\_\_\_\_) ☐ EnCores® (\_\_\_\_\_) ☐ TerraCores® (\_\_\_\_\_) ☐ \_\_\_\_\_

**Air:** ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ \_\_\_\_\_ **Other Matrix** (\_\_\_\_\_) ☐ \_\_\_\_\_

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO<sub>3</sub>, na = NaOH, na<sub>2</sub> = Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, p = H<sub>3</sub>PO<sub>4</sub>, Labeled/Checked by: 1053

s = H<sub>2</sub>SO<sub>4</sub>, u = ultra-pure, znna = Zn (CH<sub>3</sub>CO<sub>2</sub>)<sub>2</sub> + NaOH

Reviewed by: 676

# SAMPLE ANOMALY REPORT

DATE: 08 / 9 / 2016

## SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☒ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☐ Client sample ID
  - ☐ Sampling date and/or time
  - ☐ Number of container(s)
  - ☒ Requested analysis
- ☐ Sample container(s) compromised (comment)
  - ☐ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags\*)
  - ☐ Leaking (transferred into client's Tedlar™ bags\*)

\* Transferred at client's request.

## MISCELLANEOUS: (Describe)

## HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

## Comments

(-1) Received 1-Liter amber glass bottle w/H<sub>2</sub>SO<sub>4</sub> for all analyses - (Metals container not received).

## Comments

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: \_\_\_\_\_

Reported by: 1053

Reviewed by: 659

\*\* Record the total number of containers (i.e., vials or bottles) for the affected sample.

**Nicole Scott**

---

**From:** Diana Lang <diana.lang@memorialpp.com>  
**Sent:** Monday, August 22, 2016 8:46 AM  
**To:** Nicole Scott  
**Cc:** Mary Lawry; STEVE LAWRY  
**Subject:** RE: Weekly NPDES Produced Water Monitoring / CEL 16-08-0626 / Invoice 1358839

Hi Nicole –

Would it be possible to change the oil and grease analyses on the remaining 3 samples to be RUSH. If we could get data by tomorrow, it would be appreciated.

Thank you.

Diana Lang  
 Direct: (562) 628-1529  
 Cell: (562) 522-5095




---

**From:** Diana Lang  
**Sent:** Friday, August 19, 2016 9:58 AM  
**To:** 'Nicole Scott' <NicoleScott@eurofinsUS.com>  
**Cc:** STEVE LAWRY <lawrylts@sbcglobal.net>; Mary Lawry <m.lawrylts@yahoo.com>  
**Subject:** RE: Weekly NPDES Produced Water Monitoring / CEL 16-08-0626 / Invoice 1358839

Yes. Thank you.

Diana Lang  
 Direct: (562) 628-1529  
 Cell: (562) 522-5095




---

**From:** Nicole Scott [<mailto:NicoleScott@eurofinsUS.com>]  
**Sent:** Friday, August 19, 2016 9:57 AM  
**To:** Diana Lang <[diana.lang@memorialpp.com](mailto:diana.lang@memorialpp.com)>  
**Cc:** STEVE LAWRY <[lawrylts@sbcglobal.net](mailto:lawrylts@sbcglobal.net)>; Mary Lawry <[m.lawrylts@yahoo.com](mailto:m.lawrylts@yahoo.com)>  
**Subject:** RE: Weekly NPDES Produced Water Monitoring / CEL 16-08-0626 / Invoice 1358839

No problem, Diana. Is standard TAT okay?

Thanks,  
 Nicole Scott  
 Project Manager

Eurofins Calscience, Inc.